

## **SUPPORTING STATEMENT**

**U.S. Department of Commerce**

**National Institute of Standards and Technology**

**NIST Generic Clearance for Decision Science Data Collections**

**OMB Control No. 0693-XXXX**

### **SUPPORTING STATEMENT PART A**

#### **Abstract**

The core mission of the National Institute of Standards and Technology (NIST) is to promote U.S. innovation and industrial competitiveness by advancing measurement science, standards, and technology in ways that enhance economic security and improve our quality of life. NIST's operating units increasingly recognize that the built environment is meant to serve social and economic functions. With this in mind, NIST proposes to conduct a number of data collection efforts directly related to decision-making across individuals, institutions, and communities relevant to key research areas of the agency. The use of decision and information science is critical to further the mission of NIST to promote U.S. innovation and industrial competitiveness. NIST proposes to conduct a number of data collection efforts in decision and information science to include: decision analysis, risk analysis, cost-benefit and cost-effectiveness analysis, constrained optimization, simulation modeling, and application of perception, information processing, and decision models and theories; and drawing on parts of operations research, microeconomics, statistical inference, management control, cognitive and social psychology, and computer science. By focusing on decisions as the unit of analysis, decision science provides a unique framework for understanding interactions across technologies, socio-economic networks, organizations (e.g., institutions, firms), elements of the built environment, and a range of ecological problems and perceptions that influence these decisions. Data may be collected through a variety of modes, including but not limited to electronic or social media, direct or indirect observation (i.e., in-person, video and audio collections), interviews, structured questionnaires, observational study designs, and focus groups.

#### **Justification**

**1. Explain the circumstances that make the collection of information necessary. Identify any legal or administrative requirements that necessitate the collection. Attach a copy of the appropriate section of each statute and regulation mandating or authorizing the collection of information.**

In accordance with the Office of Management and Budget's (OMB) regulations at 5 CFR 1320 - implementing the Paperwork Reduction Act, the Government Performance and Results Act

(GPRA) of 1993, Executive Order 12862 - Setting Customer Service Standards, the National Performance Review, good management practices, and its mission,

“To strengthen the U.S. economy and improve the quality of life by working with industry to develop and apply technology, measurements, and standards”

the National Institute of Standards and Technology (NIST), a non-regulatory agency of the Department of Commerce, proposes to conduct a number of surveys and other primary data collections related to NIST efforts to better understand decisions made by current and potential users of NIST developed methods, data, and products. The areas of inquiry include infrastructure resilience, community planning processes, sustainability, cybersecurity, and manufacturing. Fundamentally, the tools and data made available by NIST and NIST’s partners will inform decision processes, and a more explicit exploration [better understanding] of individual or group decision-making needs and contexts, as well as the performance of these data and tools as decision support, is required to advance their utility. These decision science collections serve to address the mission of NIST while using taxpayer funds effectively and efficiently through scoping of research efforts and better understanding communication of research outcomes.

Under such acts as the National Construction Safety Team Act and the NIST Organic Act, NIST conducts research and develops guidance and other related tools to ensure and enhance the safety and well-being of people. Understanding the needs, performance, and usability of data and guidance developed is highly relevant to the NIST mission in multiple ways; for example, decision science is relevant to increased infrastructure resilience, community planning processes, sustainability, cybersecurity, and manufacturing under this generic collection. Furthermore, the ability to examine decision-making in real time and to compensate those from which decision science information is collected is critical.

**2. Indicate how, by whom, and for what purpose the information is to be used. Except for a new collection, indicate the actual use the agency has made of the information received from the current collection.**

The core mission of the National Institute of Standards and Technology (NIST) is to promote U.S. innovation and industrial competitiveness by advancing measurement science, standards, and technology in ways that enhance economic security and improve our quality of life. NIST’s operating units across the agency increasingly recognize that the built environment is meant to serve social and economic functions. With this in mind, NIST proposes to conduct a number of data collection efforts directly related to decision-making across individuals, institutions, and communities relevant to key research areas of the agency. The use of decision and information science is critical to further the mission of NIST to promote U.S. innovation and industrial competitiveness.

NIST proposes to conduct a number of data collection efforts in decision and information science to include: decision analysis, risk analysis, cost-benefit and cost-effectiveness analysis, constrained optimization, simulation modeling, and application of perception, information processing, and decision models and theories; and drawing on parts of operations research, microeconomics, statistical inference, management control, cognitive and social psychology, and computer science. By focusing on decisions as the unit of analysis, decision science provides a

unique framework for understanding interactions across technologies, socio-economic networks, organizations (e.g., institutions, firms), elements of the built environment, and a range of ecological problems and perceptions that influence these decisions. The use of decision science techniques will allow researcher to understand and improve the judgment and decision making of individuals, groups, and organizations relative to NIST associated research areas.

Data may be collected through a variety of modes, including but not limited to electronic or social media, direct or indirect observation (i.e., in-person, video and audio collections), interviews, structured questionnaires, and focus groups. NIST will limit its inquiries to data collections that solicit voluntary responses; however, appropriate remuneration will be available for select collections and sampled populations, for example to increase participation in studies with difficult to access populations, to improve retention in longitudinal studies, or to compensate professionals for the time taken participating in research.

The results of the data collected related directly to decision-making will be used in research efforts aimed to increase U.S. competitiveness, decrease negative impacts of hazards on society, and, in turn, direct NIST research activities towards meaningful areas of critical inquiry and allow for solutions to be packaged and disseminated in a manner that most effectively addresses specific stakeholder groups and needs of National importance. NIST will outline individual research questions in the respective supporting statements for those information collections.

Steps will be taken to ensure and maintain respondent anonymity in each activity covered by this request.

For each proposed request using the generic clearance, NIST will submit the collection instrument and related documents (e.g., letters, emails to respondents, scripts, etc.), as well as proposed statistical methods to be employed to OMB. The full supporting statement should include responses to the following questions

Explain who will be surveyed and why the group is appropriate to survey describing the specific goals and purposes of the study as well as the specific research questions that the study will address. Describe whether this study will be used strictly as feedback for internal programmatic use only, or whether it will provide performance measures for Congress or OMB, inform policy, inform agency rulemaking, or be published as an agency report or a report to Congress. Include a discussion of the strengths and weaknesses of the proposed design and its suitability for the intended uses.

2. Explain how the survey was developed including consultation with interested parties, pretesting, and responses to suggestions for improvement.
3. Explain how the survey will be conducted, how customers will be sampled if fewer than all customers will be surveyed, expected response rate, and actions your agency plans to take to improve the response rate.
4. Describe how the results of the survey will be analyzed and used to generalize the results to the entire customer population. Also, will this information be used by other

Federal agencies? If so, for what purposes? Are there any privacy concerns related to this information sharing? If so, how have these been addressed?

5. Peer Review: If there is a reasonable likelihood that the results of this information collection will constitute “influential scientific information” under the Information Quality Bulletin for Peer Review, has NIST developed a peer review plan that will be posted on its peer review agenda?

In general, the data collected will be used by NIST researchers to better understand decision-making processes in accordance with the core mission of NIST.

This research space includes, but is not limited to decision-making and data needs broadly applied to the topics of codes and standards, functional recovery, cyber security, manufacturing, community resilience, emergency and public communication, related planning processes, and sustainability in the built environment and impacted social and economic systems, in addition to planning the direction of future research and guidelines. The surveys and other empirical data collections may include involvement from the following members of the public: individuals or households; first responders; business representatives or other for profit organization operators/members; and representatives from not-for-profit institutions; education institutions; medical institutions; regional; State, local or Tribal government; federal government; standards development organizations; and professional associations.

The data collected will not be directly disseminated to the public in raw form, but aspects or portions of the information collected may be consolidated or used to support research published in various journal papers, reports, and conference proceedings, as well as in the development or improvement of NIST guidance, tools, and other products.

Data collected from individual collections under this umbrella submission may be categorized as Human Subjects research. In such cases, individual collection efforts will need to be vetted through and approved by the NIST Research Protection Office as needed or required. The frequency of data collection efforts will be on an as-needed basis.

This information collection and dissemination will comply with the NIST Chief Information Officer (CIO) Information Quality Guidelines and Standards. Quality will be ensured and established at levels appropriate to the nature and timeliness of the information to be disseminated and will include all pre-dissemination reviews, as required by the Information Quality Guidelines and Standards.

**3. Describe whether, and to what extent, the collection of information involves the use of automated, electronic, mechanical, or other technological collection techniques or other forms of information technology, e.g., permitting electronic submission of responses, and the basis for the decision for adopting this means of collection. Also describe any consideration of using information technology to reduce burden.**

Whenever possible, information technology will be used to reduce burden on solicited individuals. In addition to traditional data collection methods, NIST will, whenever appropriate, offer electronic response options via the NIST website and other online tools (e.g. online survey platforms or utilizing online interview or focus group options).

The planned use of transactional and electronic web site surveys will substantially contribute to the number of projected responses and associated also reduce the overall burden hours.

**4. Describe efforts to identify duplication. Show specifically why any similar information already available cannot be used or modified for use for the purposes described in Item 2, above.**

NIST has an internal review process that will examine each survey or data collection effort to be conducted under the generic clearance—to prevent internal duplication of effort and to ensure that appropriate data collection instruments are developed. By examining its three-year, NIST-wide requirements and combining those requirements into a generic clearance request, NIST is, to the greatest extent possible, centralizing the administration of its public data collections. This will provide for a consistent and comprehensive approach. While there may be other surveys or data collections that become the subject of separate clearance requests, NIST is confident that the procedures in place ensure that there will be no duplication within NIST-directed research.

The surveys and other empirical data collections may include involvement from the following members of the public: individuals or households; first responders; business representatives or other for profit organization operators/members; and representatives from not-for-profit institutions; education institutions; medical institutions; regional; State, local or Tribal government; federal government; standards development organizations; and professional associations.

Given the nature of decision-making, especially in areas of inquiry with associated long timeframes, there may be some duplication of responses when a longitudinal study is undertaken. Such studies will serve to provide valuable insights to the understanding of the poorly understood processes or novel deployment of new technology and are instrumental during the period pre- and post- approval of a new design standard.

Individuals participating in these types of data collection efforts may be asked to sign an informed consent document (meaning participants are informed of the data collection and are providing their consent to participate). Longitudinal studies may require that an individual be surveyed more than once for a given tool, e.g., during the period before and after a disaster event and pre- and post-approval of a new design standard. NIST will provide an example of the consent form that will be provided to each possible respondent. This consent form will be provided as a supplemental document for the submission package.

**5. If the collection of information impacts small businesses or other small entities, describe any methods used to minimize burden.**

Some small business and other small entities may be involved in these efforts; however, NIST will keep the burden to them as well as on any business, organization or individual at a minimum by asking for opinions on a strictly voluntary basis and by asking for the minimum amount of information needed to evaluate the future direction and scope of NIST research.

Additionally, the ability to use remuneration is a means to compensate business-owners and other professionals for the time spent responding to research and will be discussed in individual requests if needed.

**6. Describe the consequence to Federal program or policy activities if the collection is not conducted or is conducted less frequently, as well as any technical or legal obstacles to reducing burden.**

If NIST does not conduct the proposed data collections to support this research, progress on data and tools that inform and improve decision-making for critical topics such as community resilience, cybersecurity, and manufacturing competitiveness, among other NIST research topics will be greatly diminished. Additionally, results from these data collections may lead to further research resulting in assessment or enhancements of products, services, and information, as well as identifying high-priority items for improvement or inclusion in the suite of products, services, and programs NIST provides for community resilience, cybersecurity, and manufacturing competitiveness, among other topics. Specific examples include changes to building codes and standards, as well as improved guidance and tools on community resilience which are informed by a greater understanding of user needs, perceptions, decision environment and processes, and the tool's comprehensibility and performance, where applicable.

If these surveys and other data collections were conducted less frequently or not conducted, NIST researchers would lack important information that may hinder the future direction and scope of NIST research as well as achieving NIST's mission. Outputs from these studies are likely to lead to a reduction in costs incurred to U.S. community stakeholders due the benefits to the U.S. public, such as more effective and efficient technology development processes. For program evaluations, surveys, and research studies, NIST will provide a brief review of literature for each collection if needed and explain why the existing information is not sufficient to meet the current needs of the agency.

**7. Explain any special circumstances that would cause an information collection to be conducted in a manner: requiring respondents to report information to the agency more often than quarterly; requiring respondents to prepare a written response to a collection of information in fewer than 30 days after receipt of it; requiring respondents to submit more than an original and two copies of any document; requiring respondents to retain records, other than health, medical, government contract; grant-in-aid, or tax records, for more than three years; in connection with a statistical survey, that is not designed to produce valid and reliable results that can be generalized to the universe of study; requiring the use of a statistical data classification that has not been reviewed and approved by OMB; that includes a pledge of confidentiality that is not supported by authority established in statute or regulation, that is not supported by disclosure and data security policies that are**

**consistent with the pledge, or which unnecessarily impedes sharing of data with other agencies for compatible confidential use; or requiring respondents to submit proprietary trade secrets, or other confidential information unless the agency can demonstrate that it has instituted procedures to protect the information's confidentiality to the extent permitted by law.**

The data collections to be conducted under this generic clearance will be completed in accordance with the guidelines in 5 CFR 1320.5

**8. If applicable, provide a copy and identify the date and page number of publication in the Federal Register of the agency's notice, required by 5 CFR 1320.8(d), soliciting comments on the information collection prior to submission to OMB. Summarize public comments received in response to that notice and describe actions taken by the agency in response to these comments. Describe efforts to consult with persons outside the agency to obtain their views on the availability of data, frequency of collection, the clarity of instructions and recordkeeping, disclosure, or reporting format (if any), and on the data elements to be recorded, disclosed, or reported. Consultation with representatives of those from whom information is to be obtained or those who must compile records should occur at least once every 3 years - even if the collection of information activity is the same as in prior periods. There may be circumstances that may preclude consultation in a specific situation. These circumstances should be explained.**

A 60-day Federal Register Notice (FRN) soliciting public comments was published on Monday, March 15, 2021 (Vol. 86, Number 48, pages 14314-14315). No comments were received.

A 30-day Federal Register Notice (FRN) soliciting public comments was published on Thursday, June 24, 2021 (Vol. 86, Number 119, pages 33232-33233). No comments were received.

NIST will consult with various research groups and stakeholders from whom information is to be obtained or those who must compile records at least once every 3 years. For each collection, NIST will describe any consultation outside of the agency, including but not limited to soliciting views on the availability of data, the frequency of collection, the clarity of instructions and recordkeeping, disclosure, or reporting format (if any), and on the data elements to be recorded, disclosed, or report. (This could include, among others, public meetings, outreach to stakeholders, review panels, and advisory committees.)

**9. Explain any decision to provide any payment or gift to respondents, other than remuneration of contractors or grantees.**

Remuneration may be provided to study participants as a means to improve response rates, improve retention within longitudinal studies, and/or to compensate individuals for the time spent participating in research. The presence and amount of compensation will be decided on a study-by-study basis and a justification will be provided in their specific PRA applications. The

use of remuneration is anticipated to improve the composition of study samples and the resulting research outcomes and the need for remuneration will be discussed in each collection.

**10. Describe any assurance of confidentiality provided to respondents and the basis for the assurance in statute, regulation, or agency policy. If the collection requires a systems of records notice (SORN) or privacy impact assessment (PIA), those should be cited and described here.**

The Privacy Act (5 U.S.C. § 552a (3)) requires a Privacy Act Statement when collecting personal information that will be placed or stored in a system of records. If a determination is made to collect Personally Identifiable Information (PII), under each individual information collection request, NIST will provide a link to the appropriate System of Records Notice (SORN) and privacy impact assessment (PIA).

Individuals will be assured of confidentiality to the extent permitted by law, including the Freedom of Information Act (FOIA) and language will be provided on each collection.

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**11. Provide additional justification for any questions of a sensitive nature, such as sexual behavior and attitudes, religious beliefs, and other matters that are commonly considered private. This justification should include the reasons why the agency considers the questions necessary, the specific uses to be made of the information, the explanation to be given to persons from whom the information is requested, and any steps to be taken to obtain their consent.**

Not applicable, no sensitive data will be collected.

**12. Provide estimates of the hour burden of the collection of information.**

Number of Respondents: 30,000.

Average Hours Per Response: Varied, dependent upon the data collection method used. The possible response time may be 15 minutes to complete a questionnaire or 2 hours to participate in an interview.

Burden Hours: 18,000

**13. Provide an estimate for the total annual cost burden to respondents or record keepers resulting from the collection of information. (Do not include the cost of any hour burden already reflected on the burden worksheet).**

There are no costs to the respondents.



**14. Provide estimates of annualized costs to the Federal government. Also, provide a description of the method used to estimate cost, which should include quantification of hours, operational expenses (such as equipment, overhead, printing, and support staff), and any other expense that would not have been incurred without this collection of information. Agencies may also aggregate cost estimates from Items 12, 13, and 14 in a single table.**

This is a Generic Clearance which will potentially be used across all NIST research programs. NIST estimates that it would involve an annual estimated total of 560 hours and an estimated cost of \$125,000 per year.

NIST will describe individual cost estimates for each individual information collection request made. For example, if NIST determines that a Contractor will be involved in the collection efforts, those specific costs will be described.

**15. Explain the reasons for any program changes or adjustments reported on the burden worksheet.**

This is a new clearance, therefore NIST is establishing the baseline burden. Should there be programmatic changes or adjustments, updates will be made accordingly.

**16. For collections of information whose results will be published, outline plans for tabulation and publication. Address any complex analytical techniques that will be used. Provide the time schedule for the entire project, including beginning and ending dates of the collection of information, completion of report, publication dates, and other actions.**

The results of these data collections will help to further and improve guidance on framing choices for decision making and ways in which to reduce the impacts of hazards and climate impacts on buildings, infrastructure, and communities. Findings will be used in technology transfer as applicable through changes in building codes and standards. Results may be used in papers published in research journals and presented at conferences. Findings from the data collection activities may also be published in books, compendiums, and NIST publications. Results may be disseminated to NIST staff, key policy and management officials, and both public and private stakeholders. There will be no attribution to individuals in the analyzed data.

For each collection if applicable, NIST will provide a table outlining the timeline for collection, tabulation, and (if applicable) publication of the information collected, describe any plans to publish the results of this collection and describe plans for tabulation and analysis of the information collected.

**17. If seeking approval to not display the expiration date for OMB approval of the information collection, explain the reasons that display would be inappropriate.**

All written and electronic material will display the OMB Control # and current expiration date of the OMB approval. All written and electronic surveys (with the exception of transactional

surveys in the form of business reply cards where space will not permit) will display the following notification:

OMB Control #XXXX-YYYY

Expiration date: ADD DATE

This collection of information contains Paperwork Reduction Act (PRA) requirements approved by the Office of Management and Budget (OMB). Notwithstanding any other provisions of the law, no person is required to respond to, nor shall any person be subject to a penalty for failure to comply with, a collection of information subject to the requirements of the PRA unless that collection of information displays a currently valid OMB control number. Public reporting burden for this collection is estimated to be between 15 and 120 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed and completing and reviewing the collection of information. Send comments regarding this burden estimate or any aspect of this collection of information, including suggestions for reducing this burden, to the National Institute of Standards and Technology, Attn: Jennifer Helgeson, Economist, NIST, 100 Bureau Drive, MS 8603, Gaithersburg, MD 20899-1710, telephone 301-975-6133, or via email to [jennifer.helgeson@nist.gov](mailto:jennifer.helgeson@nist.gov).

**18. Explain each exception to the topics of the certification statement identified in “Certification or Paperwork Reduction Act Submissions.”**

Not applicable. NIST does not require any exceptions.